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ABSTRACT

In order to learn whether public communications (defined as both personal and impersonal communication) can be effective in preventing residential fires, a search was conducted of all available published literature reporting empirically based research evidence on communications. This paper outlines and discusses the search procedure, the sources which were consulted, and four main kinds of evidence: effects of fire-prevention communications campaigns, effects of safety (nonfire) communications campaigns, effects of other (nonsafety) communications campaigns, and general principles of persuasion by communications. Some of the conclusions offered in the paper are that relatively few household-fire-prevention communications campaigns have been reported and that there has been even less research on the effects of such campaigns, that no rigorous evidence is available as to whether communications campaigns can affect household fire prevention, and that such campaigns can be effective if properly planned and evaluated. (JM)

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The Effects of Public Communication Programs on Fire Prevention in the Home: A Review

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October 4, 1972

A Report to
The National Commission on Fire Prevention and Control
Washington, D.C.

CS 501 634

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The Effects of Public Communication Programs on Fire Prevention: A Review

By Jack B. Haskins

I A. The Problem

It has been estimated that over 12,000 persons die from fires annually in the United States, and about half the deaths occur in residential fires. Similarly, the property loss from fires annually is about 2½ billion dollars, of which about one-third is from residential fires.

A reduction in these figures can come about primarily through two avenues, fire prevention and fire control. Fire prevention is logically the most desirable approach.

Of the many possible approaches to fire prevention, communications programs aimed at the general public represent one important possibility. Communications is understood to embrace all sorts of communication, education and information activities.

"Public communications" is a term that can embrace both personal communication and various forms of impersonal communication, including the mass media.

I B. Purpose of This Study

Can public communications be effective in fire prevention? That is the basic question to be explored in this review. While the principal focus will be directed toward prevention of careless residential fires in urban areas, some attention will be given to prevention of other sorts of fires. Arson as a cause is specifically excluded.

No original research will be conducted in this exploration. It will be confined to a thorough search of existing literature. Further, only empirically based research evidence on communications will be reported. While a knowledge of expert opinions on and traditional practices of fire prevention communications can be very useful in many respects, that is a separate topic beyond the scope of this report.

Beyond the specific attention to fire prevention communications programs, evidence will also be sought from other safety communications fields (e.g., traffic safety), from mass communications used for advertising and non-commercial promotional campaigns, and from general principles and theories of communication from basic non-applied research in the field.

While the search will be general, a keen eye will be cocked toward finding solutions to the following hypotheses which have been broached by authorities in the fire prevention field.

"Most fires occur because of public apathy."

"Greater public awareness is the single activity with greatest potential for reducing losses."

"Public education and communication programs can have an effect."

"There is need for more public education programs."

"Careless residential fires are more of a problem in large urban areas than in smaller and non-urban areas."

"The public is ignorant of fire prevention procedures."

"The public is ignorant of the necessary action to take when fire occurs, including the location of the nearest fire alarm box."

"Public communication campaigns will appeal primarily to those who are already aware and knowledgeable."

"Public communication can be effective only for short periods."

"People are so satiated with fire prevention and other safety messages that they will tune out if exposed."

"The people most in need of fire prevention education are those of low-education and low-income levels, who will also be the least responsive group."

"The effects of fire prevention campaigns can only be determined over a long period of time, say 5-10 years."

"Public education is only one of many needed countermeasures."

"Public communication is more cost effective than prevention through personal contact and other means."

"Public communication campaigns should create awareness, provide specific instructions, change attitudes, and be sustained over long periods of time."

"The public is complacent toward the rising trend of fire losses and has no active desire for improved fire safety."

"A new fictitious character, like Smokey the Bear, could prevent home fires."

"Because of the nature of the problem of fire, the use of fearsome and threatening messages on the dangers of fire are logically indicated."

These are only a few of the many possible opinions on the effectiveness of fire prevention communications campaigns.

II. Procedure and Sources Consulted

A thorough and systematic search of existing literature in periodicals, books and other sources was conducted to locate pertinent evidence.

Keywords and topic descriptors used in varying combinations in the search included: fire, safety, prevention, public, social, community, education, communications, information, problems, attitudes, persuasion, and other related words.

Indexes, Bibliographies and Lists Searched:

University of Tennessee Graduate Library main index files
Danielson and Wilhoit, Computerized Bibliography of Mass Communications Research.
Hansen and Parsons, Mass Communications: A Research Bibliography
Journalism Quarterly Cumulative Index (1924-1963) and annual indexes
Public Opinion Quarterly Cumulative Index (Vol. 1-1967) and annual indexes
Research in Education (ERIC) Cumulative Index

Abstracting and Review Journals:

Psychological Abstracts (1927-August 1972)
Sociological Abstracts (1953-June 1972, with exception of 1971 volume unavailable)
Dissertation Abstracts (1962-69)
Directory of Fire Research in the U.S. (6 volumes, through 1972)
Fire Research Abstracts and Reviews (1959-1971)

Primary Journals:

Journal of Safety Research (all issues)
Journal of Communications (all issue indexes)
Journalism Quarterly
(a number of other journals were browsed and then ignored)

Other Sources:

Educational Research Information Clearinghouse (ERIC)
National Safety Council research library (search performed by NSC)

Other periodicals, lists and sources are undoubtedly available for further search, but within the time limits imposed on the task, the coverage of various abstracting journals (which embrace hundreds of primary journals) provides reasonable assurance that very little important published evidence has been overlooked.

III A. Effects of Fire Prevention Communications Campaigns

The intensive literature search previously described resulted in twelve "finds" bearing at least some tenuous claim to being research on fire prevention communications campaigns aimed at the general public. Of these, eight were concerned with household fire prevention, the others with forest fires and other situations.

The term "communications" is used broadly here to include personal contact as well as impersonal media messages.

1. Household Fire Prevention Campaigns

. False alarm statistics were examined before and after a fire prevention campaign in Leicester, England. No perceptible change was observed (Chambers, 1969).

The research design: before-and-after measurement of behavior, no control group.

. In apparently the same Leicester campaign, home fire statistics were compared before and after the campaign. Both the frequency and severity of home fires appeared to be lower after the campaign (Chambers, 1970).

The research design: before-and-after measurement of behavior, no control group.

. A study to determine the effectiveness of fire demonstrations was conducted in Tennessee in 1964-65 (Hopkins, 1967). Fire demonstrations by public health personnel were accompanied by before-and-after measures of knowledge, attitudes and safety practices in the home. Favorable changes in knowledge and attitudes occurred, but no changes in actual home safety practices were noted.

The research design: before-and-after measurement of verbal and behavioral measures, no control group.

. Firemen in Lancashire County, England, visited about 500 households and inventoried home fire hazards on a checklist. A return visit was made three months later, at which time it was found that over half the hazards had been remedied (Daxon, 1970).

The research design: before-and-after measurement of behavior, no control group.

. Three U.S. studies are touched on in a recent overview of fire prevention (Hughes, 1972). A program in Missouri involved three years of total communications effort to the general public of six counties. A reduction of 43% in fire deaths over the three year period was noted.

The research design: apparently a before-and-after measuremen of behavior, presence of a control group and other details indeterminate without reference to primary report (unavailable).

. An Arkansas program aimed at the general public of one county, and later the state, over a period of five years reportedly resulted in a 50% reduction in severe burns.

The research design: largely indeterminate without reference to primary report (unavailable) but apparently a before-and-after measurement of behavior with no control group (Hughes, 1972).

. Passing reference is made to a program in Newport News, Va., but no details were available at the time of this report (Hughes, 1972).

. An analysis of fire prevention slogans written by the public, and of fire prevention literature, indicated that the public was largely ignorant of preventive measures (Nash, 1968).

The research design: content analysis.

2. Other (non-home) Fire Prevention

Three research reports were found dealing with fire prevention communications efforts not aimed primarily at household fire prevention. One additional unsupported reference was found.

A doctoral dissertation (Griessman, 1966) reports a study on the perception and retention of forest fire prevention information. Surveys were conducted in a high-fire-rate community and a low-fire-rate community, and comparisons were made on the basis of residents knowledge, media exposure, attitudes and other verbally expressed measures. No conclusions on communications effects are possible.

A study of the effectiveness of a wall poster among British school children was conducted by the Joint Fire Research Organization (Chambers, 1966). Details of the research design and findings were missing from the secondary report available.

A burn injury control program was reportedly in the planning stage in Alabama some time ago. A study was conducted to determine the types and causes of burns in Jefferson County, and a community-wide educational program was reportedly underway for the purpose of reducing burn injuries. No details of the campaign, research design and effects if any were available, but further search may be productive.

An industrial fire safety leaflet--dealing with "chip pan" safety practices--was distributed, with a reported reduction in fire frequency 18 months after the leaflet (Chambers, 3/70).

Research design: before-and-after measure of behavior, no control group.

Several other references to fire prevention communications not accompanied by research were found in the literature search. These are almost entirely statements of opinion or reviews of existing practices and they will not be reported here. Opinions and practices are useful as idea-starters, but with no evidence as to effectiveness they can only be regarded as hypotheses for further research.

3. Conclusions

The few reported research studies on home fire prevention communications campaigns lead to the following conclusions:

1. A few public communications campaigns of various sorts--involving both personal contact and mass media--have been conducted in the U.S. and England. Some of them have been accompanied by favorable changes on such behavioral indices as home fire severity and frequency, hazardous home conditions, deaths, safety practices and burns.

2. Favorable changes in knowledge of and attitudes toward home fire prevention were not accompanied by changes in home safety practices, in the one study which obtained both verbal and behaviora data.

3. Whether the favorable changes observed are due entirely, partially or not at all to the accompanying communications is indeterminate from these studies. Apparently, none of them employed a true control group, which is necessary in order to eliminate the effects of other factors and pinpoint communications effects. In short, while favorable changes were observed, the effects due to communications cannot be determined from the available evidence.

4. Comments

This review of the literature makes it clear that there have been very few household fire prevention communications campaigns, relative to other campaigns such as traffic safety. There has been even less research on effects of fire campaigns. Such research as has been reported is inconclusive on communications effectiveness, since the research designs used did not allow for the separation of other factors operating simultaneously.

Methodologically, the few available research studies are commendable in using behavioral measures rather than relying entirely on verbal responses (as has been the norm in much communications research in other fields). In future studies, the addition of control groups would make it possible to determine the effects of the communications factor apart from other factors always present.

Finally, public communications programs aimed at household

fire prevention appear to be virtually a virgin field for communications and communications research.

III b. The Effects of Other (non-fire) Safety Communications Campaigns

For years, the public has been exposed to a barrage of safety and health communications campaigns on a variety of problems. Some of the campaigns, to name a few, have dealt with traffic safety, drug and alcohol abuse, anti-polio vaccine, smoking, fluoridation, mental health, conservation and ecology, home accident prevention and many other problems.

As noted earlier, public communications campaigns aimed at home fire prevention have been relatively sparse. Even more sparse is any real evidence on the effects of home fire prevention campaigns. Therefore, one must look further afield for evidence on possible communications effects.

Traffic and driving safety has been selected as probably the single most fruitful area of safety communications campaigns and research on effects. By analogy, one may derive some hypotheses which may be useful in the problem of home fire prevention.

Two sources will be referred to in this context.

Haskins (1969, 1970) undertook an extensive review of traffic safety research literature and came to a number of conclusions regarding campaign effects and the shortcomings of the research methodology employed in measuring effects.

The other source is the Denver synposium on mass communications research for traffic safety (1964). This symposium and related activity was an intensive effort by leaders in the field to summarize and make recommendations in the field of traffic safety

communications campaigns.

1. Effects of Safety Campaigns

Haskins (1969) undertook an intensive search of published literature to determine what was known about the effects of mass communication on drinking/driving in particular and safety in general. This was in connection with a $120,000 project for the Injury Control Program to develop and test a communications campaign aimed at reducing drinking/driving accidents, for which he was principal investigator.

The general conclusion was that, while numerous campaigns had been conducted, there had been relatively little research on their effects. Further, most of the research that had been done was inadequate and consequently no one knows whether the campaigns had been effective or not.

It is worth noting the lonely two studies on effects that were conclusive. A British study by Laner and Sell (1960) found that safety posters in steel plants had a significant beneficial effect on safety practices. An Oregon study (Kaestner et al, 1967) determined that personal letters to traffic offenders, properly worded, reduced subsequent violations. This study is notable in several respects; it was the only truly conclusive field experiment uncovered, it demonstrated that a single safety message can positively affect safety practices, and that the behavioral effects of communications can be measured.

Haskins' conclusions ended on an optimistic note: Despite the paucity of adequately designed research, there is evidence that mass communications campaigns can work. This doesn't mean that just any campaign will work, however. The greatest likelihood of success is

in those campaigns where systematic use is made of known communications principles, accompanied by appropriate pre-testing research of messages at various stages of the development process.

2. Traffic Safety Symposium

Of a more general nature are the conclusions from the Denver Synposium on Mass Communications Research for Traffic Safety (Blumenthal, 1964). The symposium and its related activities was an intensive effort by leaders in the field over several months to summarize what was already known that might be useful in traffic safety communications campaigns.

Here, in capsule form, are some of their conclusions, findings and recommendations. (These are all stated firmly here, but it must be kept in mind that the evidence is far from conclusive.)

. There are no simple formulae for communicating to mass audiences effectively.

. How people react to communications depends upon a variety of physical, physiological, psychological and social factors--i.e., each situation is unique.

. In many situations, mass communications alone cannot accomplish persuasion, and must be supplemented by personal influence.

. Personal influences can be made more effective when supplemented by mass communications.

. The use of several media combined is more effective than any single medium alone.

. What a communicator puts into a message is not necessarily the same as what the audience gets out of it.

. The same message produces different reactions in different kinds of people.

. People tend to avoid messages that are uninteresting or threatening or disagreeable. When forced exposure to such messages occurs, they interpret it according to their own taste.

. The mass media can demonstrably increase awareness and knowledge, but their effects on attitudes and behavior are considerably less.

. Persuasion takes place most readily when the message content is new and when the topic is of low importance to the audience.

. In persuading audiences to adopt innovations, both mass and personal communications techniques are called for.

. Innovation attempts are most effective when specific messages are aimed first at small groups of known innovators, who serve as models for larger groups.

. Mass adoption of an innovation takes a long time.

. Innovation is most rapid when the new practice is simple and where people are already predisposed toward it.

. General theories and models of mass communication may be useful, but due to the special nature of safety campaigns, more specific theories and models for safety campaigns are called for.

. A specific safety communications model must be based upon at least two factors, (a) assumptions about the causes of the non-safe condition, and (b) assumptions about mass persuasion.

. A tentative traffic safety campaign theory is advanced, called the Subjective/Probabilistic/Functional theory. This theory (not yet verified) states that when the objective probability of an accident is greater than the subjective probability, accidents are more likely to occur. In such cases, the purpose of mass communications is to bring subjective probabilities into line with the objective probabilities.

. Isolated one-shot, subjectively determined campaigns should be discouraged in favor of an integrated long-range program that combines research, planning, coordination plus creative and administrative talent.

. The best bet for improving traffic safety communications lies in campaigns and research based on hypotheses from the "subjective probability" theory, until it can be verified or refuted or modified.

. New ideas for campaigns should not be discouraged, but should be tested before being put into operation.

. It is unrealistic to assume that accidents can be reduced to zero. Some minimum baseline rate should be established as a goal toward which efforts will be directed.

. In addition to influencing attitudes and behavior of the primary public involved in accidents, influence should be attempted with officials, legislation and enforcement, engineering and design, and licensing and training.

. As early as possible, baseline measures should be obtained on

the public's awareness, knowledge, understanding, attitudes and behavior regarding the safety problem. Subsequent changes, if any, can then be measured against these benchmarks.

. Mass communications is no substitute for but only a supplement to such measures as legislation, enforcement, engineering, design and training.

. While there are many unanswered questions about the causes and prevention of accidents, there is a great deal already known that is not being used.

. There is very little reliable evidence on the effectiveness of mass media in reducing traffic accident rates.

. There is little point in conducting campaigns unless accompanied by measurement of the effects of the campaigns. Every campaign should contain provisions for evaluative research as an integral part.

. Communications campaign directors can be provided with a checklist of guidelines that can improve the chances of success. This checklist includes items on: explication of the problem; selecting program priorities; setting the number, duration and type of goals; determining sources of opposition; determining message content; selection of media; evaluation of program effects.

III C. The Effects of General (non-safety) Communications Campaigns

Since nothing is known for sure about the effects of fire prevention communications campaigns, and very little more is known about other safety communications campaigns, the topic is expanded here to include all other sorts of communications campaigns.

In a monograph entitled How to Evaluate Mass Communications, Haskins (1968) reviewed a number of communications field experiments conducted under real life conditions which appeared to fulfill scientific criteria for determining effects. It is worth noting that while there are uncounted thousands of communications campaigns on various topics, and hundreds of published research studies on communications, only 37 were located which were considered to be adequate measurements of the real effects of mass communications on real behavior in the real world--i.e., controlled field experiments.

1. Non-commercial Campaigns

In non-commercial situations approximating public service campaigns, the following findings were obtained:

. A direct-mail campaign increased registrations and voting turnout for local elections but had no effect on turnout for the national election.

. An "emotional" political leaflet was more effective than a "rational" leaflet in getting votes in a local political campaign.

. A soft-sell personal letter to traffic offenders reduced subsequent violations, while a form letter had no effect.

. A toilet-training pamphlet increased mothers' knowledge about toilet-training but effects on behavior were unknown.

. A direct mail campaign to persuade employers to hire blind workers had no effect on their attitudes.

. A professional academic journal tried four different campaign themes to increase subscriptions among educators. The most successful theme (to professional status) was ten times as effective as the least successful theme (on economy).

. A community college campaign to increase enrollment found that some persuasion strategies based on laboratory communications experiments were verified in a real-life field experiment.

. The Agency for International Development found that either radio or audio-visual communications were equally effective in getting Ecuador peasants to adopt new practices such as building latrines, vaccination, and so forth.

. In a campaign to get the public to use sodium fluoride for dental health, a person-to-person campaign achieved more action whil a mass media campaign produced more knowledge gains.

. A multi-media United Nations information program aimed at community leaders and newspaper editors had absolutely no effect either on community leaders' knowledge, attitudes, interest or behavior regarding the UN, nor on the kind and amount of UN news printed in newspapers.

. A multi-media campaign to get people to eat more eggs had an immediate effect, which subsequently diminished.

. A test of newspaper editing practices found that some of the traditional practices were ineffective in obtaining readership of news items, while some others were verified.

. A popular theory of communication, the "two-step flow" of information was refuted in an experiment which showed that newspaper articles had more effect on the attitudes of followers than on opinion leaders. Mostly, however, the articles had no effect at all.

2. Commercial Campaigns

Most of the valid research on communications effects has been conducted by advertisers and other commercial organizations. Very little of the evidence is publicly available. However, Haskins obtained--from both private and public sources--advertising studies with the following conclusions:

. Some television commercials can change behavior. However, changes in knowledge and attitudes from commercials have little or no relationship to behavior change.

. More apples were sold using a "utility" theme than a "health" theme.

. A high-spending utensil advertising campaign increased utensil sales, while a low-spending campaign did not.

. In an experiment on five soup advertising themes, the best theme produced considerably greater sales than the worst theme.

. Newspaper ads with one-color produced 50% more sales than a black-and-white ad.

. Neither large nor small newspaper ads had any effect in attracting viewers to a special telegram program.

. In an experiment with newspaper ads, it was found that for one product advertising had a negative effect on sales and no effect on awareness. Another product obtained increased sales and awareness but no improvement in knowledge or attitudes.

. A two-sided non-competitive soft-sell direct mail advertisement sold significantly more cars than a traditional one-sided advertisement, thus verifying a laboratory-established principle.

. A direct-mail campaign to physicians resulted in significantly more prescription sales of a new drug.

. A 3-letter direct-mail campaign resulted in an increase in egg sales, while a one-letter campaign had no effect.

. In a test of the relative effectiveness of four different media on florists sales, one medium produced high sales, another produced moderate sales, and two media apparently brought about a reduction in sales.

. A test of three different media on apple sales showed increased sales from each, but one was more effective than the other two.

. A million-dollar advertising experiment in four media showed that sales increased with advertising up to a point, then levelled off, and finally at extremely high levels of spending sales decreased (i.e., had a negative effect).

. A milk advertising campaign showed that an increase in advertising above normal levels produced additional sales, however a moderate increase was more cost efficient than a high increase.

. A multi-media public relations campaign aimed at physicians resulted in improved attitudes and behavior toward the sponsoring company even though no conscious identification of sponsor with advertising was apparent.

. Three different methods of cantalope in-store promotion display were tested, and none of them had any effect on sales.

. Loud music caused shoppers to spend less time in supermarkets than soft music, but had no effect on sales or satisfaction.

3. General Conclusions on Mass Communications Effects

From the controlled field experiments on mass communications, conducted in real-life on real-life behavior in the real world, one may derive some general conclusions.

1. Single messages generally produce little if any change in behavior.

2. Changes in awareness, knowledge or attitude are generally unrelated to changes in behavior.

3. Some of the laboratory-established communications principles work in real life, others don't.

4. Mass communications can have negative effects, or no effect or positive effects.

5. A particular mass medium may be suitable for one "product," not for another. Different media reach different audiences and serve different functions.

6. Message content--what you say and how you say it--can make or break a communications campaign. A subjectively-based "say anything but say it loud" campaign can have a boomerang effect.

7. Too much communication can produce a boomerang effect. Too little communication can do the same.

8. Some traditional communications practices and theories are harmful to the intended purpose. Some "common-sense" communications practices can have boomerang effects.

9. Immediate favorable effects of a communications campaign diminish over time.

III D. General Principles of Persuasion by Communication

A great deal of basic research in human communication has been conducted in the social and behavioral sciences, most of it since World War II. "A great deal" is exemplified by a recent bibliography on human communication by this writer which contains almost 100 pages of single-spaced references (about two lines per reference).

Each of these hundreds of references concerns a separate scientific investigation into some aspect of human communication. Most of them are controlled laboratory experiments into some small part of the communications process.

Since it is obviously impossible, and undesirable, in an overview of this sort, to report the detailed findings from all of these studies, one must use broader strokes of the brush. So far, there has been no single synthesis of all these findings into one unequivocal set of principles or a coherent theory. However, several communications researchers have summarized detailed findings into what appear to be some reasonably valid principles.

Some of the more useful summaries are in Abelson's Persuasion (1959); Berelson and Steiner's Human Behavior (1963); Cohen's Attitude Change and Social Influence (1964); Hovland's Communication and Persuasion (1953); Bettinghaus' Persuasive Communication (1968); Rogers' The Diffusion of Innovation (1962).

These are only a few.

As the potential research user can see, even the summaries grow into a formidable list.

Therefore, the attached list of "principles"--really consisting

of empirically-verified hypotheses of varying degrees of verification--can only be suggestive of the great bulk of existing knowledge about how to communicate effectively for fire prevention.

These principles are in general form--that is, they have not been translated into action principles for any specific purpose such as communication for fire prevention.

The user must have already decided on two things, his criterion objective or goal (i.e., what it is he wants to accomplish) and his target audience (i.e., the group he wishes to influence).

Two more steps remain to be accomplished by the potential user of these findings--(1) a translation from the general principle to the specific message(s) of his own purpose, and (2) a pre-test of the specific message(s) or themes.

For example, take this general principle:

> A two-sided communication is likely to be more effective than a one-sided communication when trying to convert someone with an opposing point of view to your own point of view. A one-sided communication will be more effective among those who are unfamiliar with either side or those who are already favorably disposed to your own side.

That is not a complete statement on the various aspects of using a two-sided and one-sided message, but it will suffice for this example. The person wishing to use this principle for fire prevention must go through a translation process.

The translation stage by someone who is familiar with the situation he is trying to correct or change is absolutely essential to the effective usage of general principles. There are quite a few situations which need correcting, involving quite a few target audiences of differing characteristics, and there are many general principles of communication which can be adapted. This means that

systematic planning of communications based on scientific principles (and it certainly shouldn't be done any other way) is not a matter to be decided in one afternoon. Extensive thought and discussion on proper usage of the principles, by persons who are familiar with the problems, is necessary.

How sure can one be that these principles of communication will work? They are a great deal better than simply "winging it" or making intuitive decisions without benefit of any empirical evidence It is a safe statement to make that they will increase markedly the probability of successful communication but they will not guarantee it. And it is certainly better to choose a communications approach that has some evidence to back it up--even on a different audience or in a different situation--than to ignore the evidence or act contrary to it.

1. Selected General Principles

This overview of a few of the generally accepted conclusions, findings and principles of communication by no means exhausts the existing research evidence on effective human communication. These few are taken from some of the previously mentioned sources.

A separate and more detailed following section will be devoted to fearsome-threatening messages, due to the relevance and importance of this topic in fire prevention.

. People tend to see and hear communications that are favorable or congenial to their predispositions; they are more likely to see and hear congenial communications than neutral or hostile ones. And the more interested they are in the subject, the more likely is such selective attention.

. Neutrals on an issue or topic are unlikely to pay much attention to communications on that issue or topic, except when the communications are highly available.

. Under a monopoly of mass communications, many members of the

audience can be brought to change their opinions in the desired direction--but even here there are important qualifications: (a) by no means can all the members be brought to change their positions; (b) the process takes time; and (c) the monopoly must be complete or nearly complete; if it is not, enough communications will filter through to provide social support for the views of sizable numbers of people previously convinced of positions opposed to the monopolist's position.

. Since audience attention is self-selective, exposure to communications in different media tends to be supplementary, not complementary; that is, those who read about a topic also tend to listen, and those who pay attention at one time also tend to pay attention at another.

. The use, and perhaps the effectiveness, of different media varies with the educational level of the audience--the higher the education, the greater the reliance on print; the lower the education, the greater the reliance on aural and picture media. The better educated are more likely than others to pay attention to serious communications dealing with aesthetic or moral or educational issues.

. People tend to misperceive and misinterpret persuasive communications in accordance with their own predispositions, by evading the message or by distorting it in a favorable direction.

. The more trustworthy, credible, or prestigious the communicator is perceived to be, the less manipulative his intent is considered to be and the greater the immediate tendency to accept his conclusions.

. The nature of the source is especially effective in the case of ambiguous or unstructured topics--i.e., those topics on which the content itself is not sufficiently dominant, so that non-content factors can take hold. And vice versa: a firm attitude toward the content will affect attitude toward an ambiguous or neutral source.

. People respond to persuasive communications in line with their predispositions, and they change or resist change accordingly. Communications will be most effective--that is, will secure the response most in line with the intention of the communicator--when they are in accord with audience predispositions; when they tell people what they (most) want to be told.

. Communications are most likely to reinforce existing positions, then to activate latent positions, and least likely to change or counter existing or latent positions (i.e., to convert).

. The fuller the pre-existing information or interest, or the more firmly held the prior attitudes, then the more receptive the audience will be to congenial communications and the more resistant to uncongenial. Similarly, the greater the audience's involvement and interest, the greater will be its acquisition of information and skills.

. The communication of facts is typically ineffective in changing opinions in desired directions against the force of audience predispositions: the stronger the predispositions, the less effective the communication of facts.

. Particularly during an intensive political campaign or a crisis of public events, exposure to the media of communication increases people's interest in the matter and raises the relevance of the issue for the audience.

. The relative effectiveness of different media depends to a critical extent on what and for whom (so that generalizations are difficult).

. People with low self-esteem are more likely to be influenced by persuasive communications than are those with high self-esteem; but those with acute neurotic symptoms (i.e., neurotic anxiety or obsessional reactions) are more likely to be resistant.

. Active participation in the communicating itself--e.g., passing on the message to someone else, making a speech about it, or simply putting it in one's own words--is more effective for retaining information and for persuading than is passive reception of the communication.

. The mass media exercise an important indirect influence through "opinion leaders"--those trusted and informed people who exist in virtually all primary groups, who are the "models" for opinion within their group, who listen and read in the media, and who then pass on information and influence to their circle of relatives, friends, and acquaintances.

. Word-of-mouth or personal communication from an immediate and trusted source is typically more influential than media communication from a remote and trusted source, despite the prestige of the latter.

Message/Content Variables

. When the audience is generally friendly, or when your position is the only one that will be presented, or when you want immediate though temporary opinion change, present one side of the argument.

. When the audience starts out disagreeing with you, or when it is probable that the audience will hear the other side from someone else, present both sides of the argument.

. There will probably be more opinion change in the direction you want if you explicitly state your conclusions than if you let the audience draw their own.

. Sometimes emotional appeals are more influential, sometimes factual ones. It all depends on the kind of message and kind of audience.

. In time the effects of a persuasive communication tend to wear off. Repeating a communication tends to prolong its influence.

. The people you may want most in your audience are often least likely to be there.

The level of intelligence of an audience determines the effectiveness of some kinds of appeals.

. There will be more opinion change in the desired direction if the communicator has high credibility than if he has low credibility.

. A communicator's effectiveness is increased if he expresses some views that are also held by his audience.

Adoption of Innovations and Social Change

. Impersonal information sources are most important at the awareness stage, and personal sources are most important at the evaluation stage in the adoption process.

. There is little evidence that lack of knowledge about innovations actually delays their adoption.

. Awareness occurs at a more rapid rate than does adoption.

. The awareness-to-trial period is longer than the trial-to-adoption period.

. A crisis emphasizes the relative advantage of an innovation and affects its rate of adoption.

. The complexity and the divisibility of an innovation affect the rate of adoption.

. The communicability of an innovation affects its rate of adoption.

. Characteristics of early adopters: (a) younger; (b) higher social status; (c) more favorable financial position; (d) more specialized operations; (e) utilize information sources that are in closer contact with the origin of new ideas; (f) utilize a greater number of information sources; (g) more cosmopolite (participate in non-local groups); (h) more opinion leadership.

. Personal influence from peers is (a) most important at the evaluation stage, (b) more important for late adopters, and (c) more important in uncertain situations.

. Social changes, however large, that are desired by the people involved can be assimilated with little social disruption. Changes that are not desired, even quite small ones, can be put into effect only at considerable social and personal cost.

. The more a social change threatens or appears to threaten the traditional values of the society, the greater the resistance to that change and the greater its attendant cost in social and personal disorganization.

. Social change is more likely to occur in heterogenous societies than in homogeneous ones.

. Within a society, social change is likely to occur more frequently or more readily: (a) in the material aspects of the culture (e.g., technology) than in the nonmaterial (e.g., values); (b) in the less basic, less emotionally charged, less sacred, more instrumental or technical aspects (e.g., tools, tactics, competitive goals, impersonal means) than in the opposite (e.g., primary group relations, territorial and religious stability, systems of prestige); (c) in the simple elements of the society than in the complex ones; (d) in the nonsymbolic elements of the society than in the symbolic ones; (e) in form than in substance; (f) in periods of crisis and stress than in normal or quiescent periods; (g) via the cities than via the countryside.

. The leaders of major social changes in a society are unlikely to come from the group traditionally in control; they are more apt to come from deviant, marginal, disaffected groups.

. Innovators within a society are more likely to be younger than the resisters of change, of higher social status, and more oriented to the outside world; moreover, they take less time to adopt the new idea or practice and they discontinue less often.

2. Fearsome and Threatening Messages

Many communications campaigns (but by no means all) are aimed at the prevention of undesirable consequences, and a relatively large number of research studies have been concerned with the effects of fearsome or threatening messages on such topics.

Because of the relevance of such "threat-appeal" research to fire prevention communications, a review of the pertinent research is appropriate here.

Some of the conclusions by Higbee (1969) in reviewing 27 threat-appeal studies are presented below, along with qualifying comments by this writer.

1. The effects of threat-appeals vary in different situations. Some studies show that no-threat is more effective, others that

moderate-threat is more effective, others that high-threat is more effective. More experiments have found high-threat superior to low-threat or no-threat than the reverse.

(These results, however, are based primarily on laboratory experiments which may not be generalizable to the self-selective voluntary-attention situation inherent in real life mass communication. In addition, the results deal mainly with verbally expressed opinion or attitude rather than behavior.)

Given the qualifying circumstances above, some additional conclusions may be drawn from existing research.

2. Threatening messages are more effective if recommendations for avoiding the danger are included.

Such recommendations are more persuasive if they are specific, easy to implement, and demonstrably effective.

3. Fearsome messages are more effective among some kinds of people than among others. High-threat is more effective among persons with high self-esteem, low-threat more so among those with low self-esteem. Results also vary according to sex, age and education.

4. High-threat messages are more effective when the source is seen as highly credible, low-threat messages more so with an anonymous or non-credible source.

5. High-threat messages may be more effective on unfamiliar topics, while low-threat may be more effective on familiar topics.

6. High-threat messages may be more effective on highly important topics (e.g., cancer) while low-threat messages may be more effective for less-important topics (e.g., tooth decay).

It must be made clear that these are tentative generalizations only, since previous studies are not always consistent. The inconsistency of previous studies is due to the fact that they have been concerned with different topics, employing different kinds of people as subjects, using different media of presentation, measuring different kinds of opinion or behavior, and have differed in other major respects making comparison and summation tenuous.

One hypothesis to predict the consequences of threat appeals is as follows: The greater the threat-level up to a certain point, the more the influence. Beyond that point, influence decreases. This curvilinear effect from threatening messages rests on two additional factors: (1) the higher the level of actual danger involved, the greater the possible message effects (e.g., cancer is more dangerous than tooth decay); (2) the more likely the dangerous event is to occur, the greater the possible message effects. (e.g., tooth decay is more likely to occur than cancer.) This interaction of dangerousness and probability-of-occurrence will lead to differing optimal levels of threat-appeal usage on different topics.

Fire prevention would appear to be an ideal topic for further experimentation with threat-appeals for a variety of reasons.

IV. Summary and Conclusions

An intensive review of all available published reports was conducted to determine the possible effects of communications programs aimed at the general public for the purpose of preventing household fires. The term "communications" was interpreted broadly to include personal contacts, though the primary emphasis is on communications-education-information campaigns in mass media. The search included hundreds of research journals, and other sources, in the fields of communications, safety, fire, and behavioral research.

The principal conclusions are as follows:

(1) Relatively few household fire prevention communications campaigns have been reported, relative to other topics such as traffic safety.

(2) There has been even less research on the effects of fire prevention campaigns.

(3) Such research as has been reported is inconclusive on communications effectiveness. In short, no rigorous evidence is available as to whether public communications campaigns can affect household fire prevention.

(4) Regarding the possible effectiveness of such campaigns, one can only speculate based on analogous communications research from other fields--traffic safety, mass advertising, non-commercial promotional efforts, and basic research on communications.

(5) Even in the case of the many traffic and other safety communications campaigns, there is little rigorous research on

effects. Mass communications has had demonstrably favorable effects in some cases. However, much has been learned for the improvement of campaigns and the necessary accompanying research.

(6) In the case of other communications campaigns--commercial and non-commercial--the evidence is somewhat sounder.

Some communications campaigns have had a positive effect on behavior such as sales, voting, health practices and adoption of new practices. Others have had a "boomerang" or negative effect. Still others have had no effect.

(7) A number of general principles of communications have been empirically derived from previous research in other areas. These principles can be useful in planning fire prevention campaigns and increase the probability of success, particularly if accompanied by pre-testing research and evaluation research on effects.

(8) The use of threat-appeals in fire prevention campaigns has not been scientifically tested. From use on other topics, however, some guidelines are available for the use or non-use of fearsome and threatening messages. These should be thoroughly tested before actual usage.

(9) A general conclusion on the <u>possible</u> effectiveness of public communications campaigns aimed at household fire prevention is in order. (This must necessarily be an opinion, since there is no evidence except as available from other fields.) Such campaigns can be effective if properly planned based on existing knowledge and if accompanied by proper research to determine effectiveness. Use of the knowledge and procedures gained from the experiences of others can optimize the probability of success in fire prevention campaigns.

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